

List of Claims:

Claim 1 (Currently Amended): A complementary metal oxide semiconductor (CMOS) device ~~with an integrated photosensitive junction field-effect transistor (JFET), the device comprising:~~

a silicon substrate;

a junction field-effect transistor (JFET) formed on a surface of the silicon substrate, the JFET including a photo-absorbing layer formed on the surface of the silicon substrate; and an overglass layer formed over the JFET adapted to admit photons to the photo-absorbing layer of the JFET,

wherein the JFET detects incident photons admitted through the overglass layer and produces an amplified electrical signal corresponding to the photons detected.

Claim 2 (Currently Amended): A The CMOS device as in claim 1, wherein the JFET provides a relatively low corner frequency.

Claim 3 (Currently Amended): A The CMOS device as in claim 1, wherein an input referred noise of the JFET is relatively low.

Claim 4 (Currently Amended): A complementary metal oxide semiconductor (CMOS) active pixel sensor (APS) pixel supported on a substrate, the CMOS APS pixel comprising:
a junction field-effect transistor (JFET) adapted to detect photons and produce an amplified electrical signal corresponding to the photons detected; and

a readout switch transistor coupled to a drain terminal of the JFET.

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Claim 5 (Currently Amended): A The CMOS APS pixel as in claim 4, wherein a source terminal of the readout switch transistor is connected to a bus and a resistor, forming a source follower circuit.

Claim 6 (Currently Amended): A The CMOS APS pixel as in claim 4, further comprising:

a first resistor connected between a gate terminal of the JFET and a drain terminal of the readout switch transistor; and

a second resistor connected between a source terminal of the JFET and the drain terminal of the readout switch transistor, wherein the first and second resistors provide positive feedback and laser trimmability, and

wherein a source terminal of the readout switch transistor is connected to a bus and a current source, forming a source follower.

Claim 7 (Currently Amended): A The CMOS APS pixel as in claim 4, wherein the JFET is contained in a differential amplifier circuit.

Claim 8 (Currently Amended): A digital camera; comprising:
a complementary metal oxide semiconductor (CMOS) active pixel sensor (APS) imager providing image data, the imager comprising:

an array of CMOS APS pixels comprising a plurality of junction field-effect transistors (JFETs) adapted for photodetection and electrical signal amplification.

Claim 9 (Currently Amended): A The digital camera as in claim 8, the array of CMOS APS pixels comprising:

a silicon substrate;

a JFET formed on the surface of the silicon substrate comprising:

a photo absorbing layer formed on a the surface of the silicon substrate;

an overglass layer formed over the JFET adapted to admit photons to the photo-absorbing layer of the JFET

wherein the JFET detects incident photons admitted through the overglass layer and produces an amplified electrical signal corresponding to the photons detected.

Claim 10 (Currently Amended): A The digital camera as in claim 8, the CMOS APS pixels further comprising:

a readout switch transistor coupled to a drain terminal of the JFET.

Claim 11 (Currently Amended): A The digital camera as in claim 10, wherein a source terminal of the readout switch transistor is connected to a bus and a resistor, forming a source follower circuit.

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Claim 12 (Currently Amended): A The digital camera as in claim 10, wherein each

JFET of the plurality of JFETs is contained in a differential amplifier circuit.

Claims 13-19 (Cancelled)
